

Dictionary:

## quaternary ammonium compound

*n.*

Any of a group of compounds in which a central nitrogen atom is joined to four organic radicals and one aci agents.

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WordNet: quaternary ammonium compound

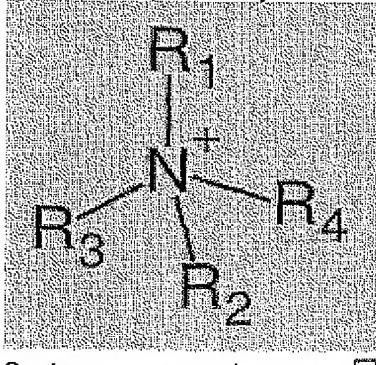
*Note: click on a word meaning below to see its connections and related words.*

The *noun* has one meaning:

Meaning #1: a compound derived from ammonium with hydrogen atoms replaced by organic groups; used as

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Wikipedia: quaternary ammonium cation



cation. Any or all of the R groups may be the same or different alkyl groups. Also, any of the R groups may be connected.

Quaternary ammonium cations, also known as quats, are positively charged polyatomic ions of the structure  $\text{NH}_4^+$  itself and primary, secondary, or tertiary ammonium cations, the quaternary ammonium cations are present in solution. Quaternary ammonium cations are synthesized by complete alkylation of ammonia or other amines.

Quaternary ammonium salts or quaternary ammonium compounds are salts of quaternary ammonium cations. They are used as surfactants, fabric softeners, and as antistatic agents (e.g. in shampoo). In liquid fabric softeners, the chloride salts are often used. This is also a common ingredient in many spermicidal jellies.

In organic chemistry, quaternary ammonium salts are used as phase transfer catalysts for reactions involving dichlorocarbenes with chloroform and sodium hydroxide.

The synthesis of this cation from ammonia is referred to as quaternization.

## See also

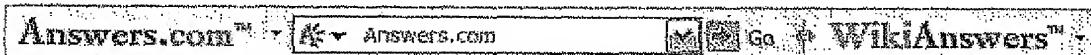
- [Choline](#)
- [Carnitine](#)
- [Benzalkonium chloride](#), a common quaternary disinfectant
- [Denatonium](#), the most bitter compound known
- [Cocamidopropyl betaine](#), a common surfactant
- [Cetyl trimethylammonium bromide \(CTAB\)](#), one of the most investigated cationic surfactant compounds
- [Tetra-n-butylammonium bromide](#) and [Aliquat 336](#), common phase transfer catalysts
- [Polyquaternium](#), designations for quaternary ammonium-containing polymers used for personal care

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